

New Inter-Tidal Rock-Dwelling Coleoptera from California.

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Here and there along our Pacific Coast are to be found certain rocks which are so situated that they are submerged by the high tides. These harbor many types of true sea animals, but in their crevices, often such articulates as mites, chilopods, pseudo-scorpions, Thysanura and Coleoptera. It is a most interesting fauna and one to which I have given some little time, during recent years. As a result, I have secured, among other things, three new species of Coleoptera. The descriptions of these are now presented.

CARABIDAE.

THALASSOTRECHUS n. gen.

Body somewhat elongate, flattened, and moderately robust. The head large, not constricted behind the eyes, with shallow frontal grooves, and two supraorbital setae. The antennae moderately stout, arising under a feeble frontal ridge, the third joint slightly longer than the second, the first and second glabrous, the second and third shining and with few hairs, the following quite hairy, subopaque, and gradually increasing in width towards apex. Eyes moderate in size and well removed beneath from the mouth. Clypeus moderately prolonged and with a setigerous puncture each side. Labrum short, broadly emarginate, plurisetose in front. Mandibles prominent, prognathous, feebly arcuate, acute at tip, and with a small setigerous puncture at apex of scrobe. Maxillae slender, acute at tip, ciliate with a few stiff hairs on inner side, the outer lobe biarticulate, palpi of moderate length, the terminal joint gradually tapering, not subulate, slightly longer than preceding, and finely truncate at tip, the penultimate not hairy. Submentum broad, its basal suture distinct, deeply emarginate and with a broad bifid tooth at middle, the epilobes dentiform, ligula moderately prominent, truncate and bisetose at apex, the paraglossae slender and very little longer than the ligula and not ciliate within, the palpi of moderate size, the last joint fusi-

form, finely truncate at tip, not subulate, and longer than the preceding joint.

Prothorax with side margin narrow and a seta at the sides near the front and at hind angles. Body not pedunculate, scutellum distinct. Elytra elliptical, not margined at base, sides narrowly inflexed, margin posteriorly entire and without internal plica, disc without distinct striae, but with five or six well-marked dorsal punctures. Prosternum not prolonged at tip. Mesosternum declivous in front and sulcate, moderately separating the coxae, the epimera narrow. Metasternum short, the epimera distinct, the posterior coxae narrowly separated. Legs moderate in length, the tibiae not spinulose externally, the anterior deeply emarginate within, the inner spur almost at middle. Tarsi slender, claws simple. The anterior tarsi of the males with two joints dilated and squamulose beneath. Type of genus, *Trechus barbarae* Horn.¹

This genus undoubtedly belongs in the tribe Pogonini, though it differs from all genera included within that tribe by Horn², by having the posterior coxae separated. Of the two groups composing that tribe, it superficially resembles most the Trechi, especially the typical genus *Trechus*, within which the type species was placed by its describer. It is, however, structurally much more closely related to the genus *Pogonus* of the group Pogoni, especially as regards its mouth parts. Its habits also more closely simulate those of *Pogonus*.

***Thalassotrechus nigripennis* n. sp.**

Elongate, subdepressed, moderately shining, rufotestaceous, abdomen and outer joints of antennae somewhat piceous, elytra black excepting narrow marginal bead and epipleurae.

Antennae moderately stout, the ninth joint reaching the elytra, the outer joints gradually broader. Head finely alutaceous, impunctate, frontal depressions vague, eyes moderately prominent, mandibles prominent and porrect.

¹"Random Studies in North American Coleoptera," by George H. Horn, M. D., Trans. Am. Soc., Vol. XIX (1892), p. 4.

²"On the Genera of Carabidae with special reference to the fauna of Boreal America," by George H. Horn, M.D., Trans. Am. Ent. Soc., Vol. IX (1881-2), p. 135.

Prothorax as long as head excluding mandibles, somewhat broader than long, base two-thirds width of apex, sides arcuate in front and almost straight behind, hind angles obtuse, lateral margin very narrow and not wider at base, apex truncate, disc smooth, with a fine longitudinal median line, the transverse lines and basal impression but vaguely indicated.

Elytra regularly oblong oval, almost one-third longer than head and prothorax together, humeri obtusely rounded, disc smooth, with but the vaguest traces of striae, six dorsal punctures. Body beneath smooth and shining. Length 5.5 mm., breadth 1.75 mm.

Type male and female in my own collection, collected at Moss Beach, San Mateo County, California, July 7, 1912. *Paratypes* to be deposited in the United States National Museum, Academy of Natural Sciences of Philadelphia, and California Academy of Sciences. Over a hundred specimens seen.

This beetle has been captured in the crevices of those rocks situated just below the high tide mark, at the mouth of Tomales Bay, Marin County, California, as well as at the type locality, and one specimen from Carmel, Monterey County, California, in the collection of Mr. L. S. Slevin, has been seen. It differs from *T. barbarae* Horn, a good figure of which has been given by Schaeffer³, by being larger, by having the prothorax proportionately broader, especially in front, and by the color. The two species of this genus are not unique among the Carabidae in living in the inter-tidal area, for we have several closely related genera, such as *Aepus* with its three species, *A. marinus* Strom. and *A. robinii* Lab. from the south coast of England and west coast of Europe and *A. gracilicornis* Woll. from the island of Madeira; *Thalassophilus longicornis* Schaum, a species which, though normally a streamside beetle, is sometimes found on the seacoast of Europe and Madeira; *Thalassobius testaceus* Gay, a species from the seacoast of Chili; and *Ilaphanus stephensi* MacLeay, from Port Dennison, Australia, which is supposed to have similar habits, as it was found "under stones in black moist soil close

³"Synopsis of the Species of Trechus, with the Description of a New Species," by Charles Schaeffer, Bull. Am. Mus. Nat. Hist., Vol. XIV (1901), pl. XXVIII, fig. 6.

to the sea beach." Besides these, we also have certain of the *Bembidii* and some *Pogonus* which are normally submerged at times.

HYDROPHILIDAE.

Ochthebius lapidicolus n. sp.

Elongate, subdepressed, dull black with but the faintest tinge of bronzing, legs piceous. Head triangular, truncate in front, broader across the eyes than apex of thorax, front with two deep foveae, labrum with front margin broadly and shallowly emarginate.

Prothorax about one-fourth broader than long, apex barely emarginate, base narrower than apex and truncate, sides straight and strongly divergent from apex to prominent median angulation, then slightly sinuate and convergent to base, not serrate, lateral margin narrow in front, broader behind, and continued around on to both base and apex, not translucent, hind angles rounded, disc but slightly convex, with shallow median longitudinal and accompanying sinuous lines but with deep sulci at sides, the more elevated portions sparsely punctured and with minute white hairs in each puncture.

Elytra elliptical, almost one and one-half times as long as head and prothorax together, with a narrow margin running from base to near apex and without serration, disc faintly striate, the striae punctured with large, elongate, shallow, and rather distantly placed punctures, faint apically but more evident basally and at sides, each puncture containing a minute white hair. Beneath finely and sparsely punctured and pubescent. Length 1.5 mm., breadth 0.5 mm.

Type and *paratype* in my own collection, collected from the crevices of the inter-tidal rocks at Moss Beach, San Mateo County, California, May 1st, 1910. Paratypes to be deposited in the United States National Museum, The Academy of Natural Sciences of Philadelphia and California Academy of Sciences. Over fifty specimens examined.

This beetle, because of its elongated, depressed, subopaque, and but slightly sculptured surface, could not be confused with any others of the genus that have so far been described from this country. Its only close relatives are *O. lejoslisi* Muls. et Rey and its variety *O. subinteger* Muls. et Rey from the south coast of England and the west coast of Europe and *O. adriaticus* Ritt. from the coast of Dalmatia, which constitute the subgenus *Prionochebius* Kunert and, like it, are true inter-tidal species. The first two, which I have seen

through the courtesy of Mr. H. G. Champion, and his father, G. C. Champion, differ from it by being generally larger, 2 mm. or over in length, evidently shining and submetallic, with prothorax but little narrower in front, the elytra with finely punctate striae, and by having the margins of both prothorax and elytra finely serrate.

EURYSTETHIDAE (AEGIALITIDAE).

Key for the Determination of the Species of the genus Eurystethes
Seidl. (Aegialites Mann.).

Elytra evidently striate.

Head and thorax not shining and with but few and inconspicuous punctures.

Elytra deeply striate and without distinct punctures.

Head and thorax alutaceous, elytra shining, eyes not prominent, longitudinal thoracic line well defined. Length 3-4 mm. (Aleutian Is., S. E. Alaska, Queen Charlotte Is.)

californicus Mann.

Elytra shallowly striate and with small but distinct punctures.

Head and thorax coriaceous, elytra rugose, eyes very prominent, longitudinal thoracic line prominent. Length 3-3.8 mm. (Robben Is. off coast of Sakhalin Is.)

stejnegeri Linell.

Head, thorax, and elytra shining and with numerous well defined punctures, eyes quite prominent, thoracic line rarely evident.

Length 2-2.5 mm. (Mendocino Co. and The Farallone Is., Cal.)

fuchsii Horn.

⁴The family and generic names as here used are in accordance with the latest rulings on nomenclature. In 1845, Col. Motschulsky described *Elosoma persica* and *E. (?) californica*, in the Bull. Soc. Imp. Nat. Mosc. Vol. 18, p. 33. In 1853, Count von Mannerheim described *Aegialites debilis* in the Bull. Mosc. Vol. 26, p. 180. This last was later found to be the same as *E. ? californica* Mots. and so had to be reduced to synonymy but because of the belief that *persica* and *californica* were not congeneric, the generic name of *Aegialites* was allowed to stand for *californicus*. Later rulings on nomenclature however made this invalid seeing that it had been previously employed to designate a genus of birds, so to remedy the defect, Seidlitz in the Deutsch. Ent. Zeit. for 1916, p. 127, proposed the name *Eurystethes* for the genus and *Eurystethidae* for the family. Therefore if we believe with him that *persica* and *californica* are not of the same genus and family, which I most decidedly do, we have no alternative but to accept the names proposed by Seidlitz.

Elytra without striae. Eyes very prominent, head, thorax, and elytra, alutaceous and subopaque, with punctures hardly evident, longitudinal thoracic line well defined. Length 2-2.5 mm. (Marin and San Mateo Cos., Cal.) *subopacus* n. sp.

***Eurystethes (Aegialites) subopacus* n. sp.**

Oblong, dull greenish blue above, alutaceous, subopaque legs and under surface rufo-piceous, the femora somewhat greenish. Head flattened, minutely and sparsely punctate, with a short longitudinal frontal impression and a broad shallow one to the inner side of each eye; eyes small, coarsely granulate, and prominent; antennae just reaching posterior margin of thorax, somewhat club-like, the tenth joint transverse.

Thorax slightly broader than long, somewhat narrower at apex than at base, widest in front of middle, sides distinctly arcuate, disc slightly convex, with broad shallow median impression running from apex to near base, secondary impressions on either side just anterior to middle, and with a few widely scattered and barely perceptible punctures.

Elytra oval, truncate at apex, wider behind, without distinct striae and distinct punctures, and with four shallow transverse impressions giving them a wrinkled appearance. Pygidium exposed. Underside sparsely and finely punctured. Length ♂ 2 mm., breadth 1 mm., ♀ length 2.25 mm.

Type ♂ and ♀ in my own collection, taken at Moss Beach, San Mateo County, California, July 7th, 1912, from the crevices of the inter-tidal rocks. A third specimen was secured later on at the same locality and a fourth from near the mouth of Tomales Bay, Marin County, California.

This very distinct species, because of its subopaqueness and lack of elytral striation, could not be confused with any of the known species. As indicated in the key, its very prominent eyes, short body, and non-shining appearance, would suggest a certain relationship to *E. stejnegeri* Linell,⁴ a species from the opposite side of the ocean. The only other beetle which has been associated with those mentioned in the table is *E. persica* Mots.,⁵ a species undoubtedly not congeneric with them.

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⁴Canad. Entom. XXX (1898), p. 74.

⁵Bull. Mosc. XVIII (1845), p. 33.